

Listing of Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-43 (canceled)

Claim 44 (previously added): A botulinum toxin type A comprising a leucine-based motif structural modification effective to alter a biological persistence of the botulinum toxin relative to an identical botulinum toxin type A without the structural modification.

Claim 45 (previously added): The botulinum toxin type A of claim 44 wherein the structural modification is an addition of a leucine-based motif to the botulinum toxin type A.

Claim 46 (canceled)

Claim 47 (currently amended): The botulinum toxin type A of claim 44 wherein the structural modification is an addition of a leucine based motif selected ~~form~~ from the group consisting of SEQ ID NO. 1, SEQ ID NO. 2, SEQ ID NO. 3, SEQ ID NO. 4, SEQ ID NO. 5 and SEQ ID NO. 6 ~~xDxxxLL, xExxxLL, xDxxxLI, xExxxLI, xDxxxLM and xExxxLM~~ wherein x is any amino acid.

Claim 48 (previously added): The botulinum toxin type A of claim 44 wherein the structural modification is a deletion of one or more amino acids in a leucine-based motif of a botulinum toxin type A light chain.

Claim 49 (previously added): The botulinum toxin type A of claim 44 wherein the biological persistence of the botulinum toxin

type A is reduced relative to a botulinum toxin type A without the structural modification.

Claim 50 (previously added): The botulinum toxin type A of claim 44 wherein the biological persistence of the botulinum toxin type A toxin is increased relative to a botulinum toxin type A without the structural modification.

Claim 51 (previously added): The botulinum toxin type A of claim 44 wherein the toxin is recombinantly produced.

Claim 52 (previously added): The botulinum toxin type A of claim 44 wherein the biological persistence is altered at least in part due to an altered biological half-life of the botulinum toxin type A.

Claim 53 (previously added): A botulinum toxin comprising three amino acid sequence regions:

- a) a first region effective for neuronal binding;
- b) a second region effective to translocate the botulinum toxin or a part thereof across a membrane; and
- c) a third region effective to inhibit neurotransmitter release,

at least one of the first, the second and the third regions being derived from a botulinum toxin, wherein the botulinum toxin comprises a leucine-based motif structural modification effective to alter a biological persistence of the botulinum toxin relative to an identical botulinum toxin without the structural modification.

Claim 54 (previously added): The botulinum toxin of claim 53 wherein the botulinum toxin is a member selected from a group consisting of botulinum toxin serotypes A, B, C₁, D, E, F, G, and mixtures thereof.

Claim 55 (previously added): The botulinum toxin of claim 53 wherein the third region is derived from botulinum toxin serotype A.

Claim 56 (previously added): The botulinum toxin of claim 53 wherein the structural modification is an addition of a leucine-based motif.

Claim 57 (canceled)

Claim 58 (currently amended): The botulinum toxin of claim 53 wherein the structural modification is an addition of a leucine based motif selected ~~from~~ from the group consisting of SEQ ID NO. 1, SEQ ID NO. 2, SEQ ID NO. 3, SEQ ID NO. 4, SEQ ID NO. 5 and SEQ ID NO. 6 ~~xDxxxLL, xExxxLL, xDxxxLI, xExxxLI, xDxxxLM and xExxxLM~~ wherein x is any amino acid.

Claim 59 (previously added): The botulinum toxin of claim 53 wherein the structural modification is a deletion of one or more amino acids in a leucine-based motif of the third region.

Claim 60 (previously added): The botulinum toxin of claim 53 wherein the biological persistence of the botulinum toxin is reduced relative to an identical botulinum toxin without the structural modification.

Claim 61 (previously added): The botulinum toxin of claim 53 wherein the biological persistence of the botulinum toxin is

increased relative to an identical botulinum toxin without the structural modification.

Claim 62 (previously added): The botulinum toxin of claim 53 wherein at least one of the first, the second and the third regions is recombinantly produced.

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Claim 63 (previously added): The botulinum toxin of claim 53 wherein at least one of the first, the second and the third regions is isolated from a naturally occurring botulinum toxin.

Claim 64 (previously added): The botulinum toxin of claim 53 wherein the biological persistence is altered at least in part due to an altered biological half-life of the botulinum toxin.
